WHAT IS CLAIMED IS:

1.   An image processing apparatus for embedding a dot pattern which indicates added information, comprising:

    a halftone processor, arranged to execute error diffusion for an image;

    a determiner, arranged to determine a component of the dot pattern to be embedded on the basis of the image that has undergone error diffusion; and

    an embedding section, arranged to embed the dot pattern in the image that has undergone error diffusion using the determined component.

2.   The apparatus according to claim 1, wherein said determiner determines the component on the basis of a power spectrum in a predetermined frequency domain after the dot pattern is embedded in the image that has undergone error diffusion.

3.   The apparatus according to claim 1, wherein said determiner evaluates an influence of dot pattern embedding on an image quality on the basis of power spectra in a predetermined frequency domain before and after the dot pattern is embedded in the image that has undergone error diffusion, and determines the component on the basis of an evaluation result.

4.   The apparatus according to claim 3, wherein said determiner employs a component which rarely affects the image quality little and for which an evaluation value indicating a degree of influence is not less than a

preset value.

5. The apparatus according to claim 1, wherein when a texture formed in the image by error diffusion is present, said determiner determines the component on the basis of the texture.

6. The apparatus according to claim 5, wherein said determiner employs a component having a direction corresponding to a direction of the texture.

7. The apparatus according to claim 5, wherein said determiner employs a component having a direction substantially perpendicular to a direction of the texture.

8. The apparatus according to claim 1, wherein said embedding section embeds the dot pattern in the image that has undergone error diffusion using density maintaining processing.

9. An image processing method of embedding a dot pattern which indicates added information, comprising the steps of:

executing error diffusion for an image;

determining a component of the dot pattern to be embedded on the basis of the image that has undergone error diffusion; and

embedding the dot pattern in the image that has undergone error diffusion using the determined component.

10. The method according to claim 9, wherein in said

determining step, the component is determined on the basis of a power spectrum in a predetermined frequency domain after the dot pattern is embedded in the image that has undergone error diffusion.

5   11.   The method according to claim 9, wherein in said determining step, when a texture formed in the image by error diffusion is present, the component is determined on the basis of the texture.

12.   A computer program product storing a computer
10   readable medium comprising a computer program code, for an image processing method of embedding a dot pattern which indicates added information, comprising process procedure code for:

executing error diffusion for an image;

15   determining a component of the dot pattern to be embedded on the basis of the image that has undergone error diffusion; and

embedding the dot pattern in the image that has undergone error diffusion using the determined
20   component.